February 2024

Newsletter

*Click above to read full Newsletter

DONATE TO HOPE & HUMANITY

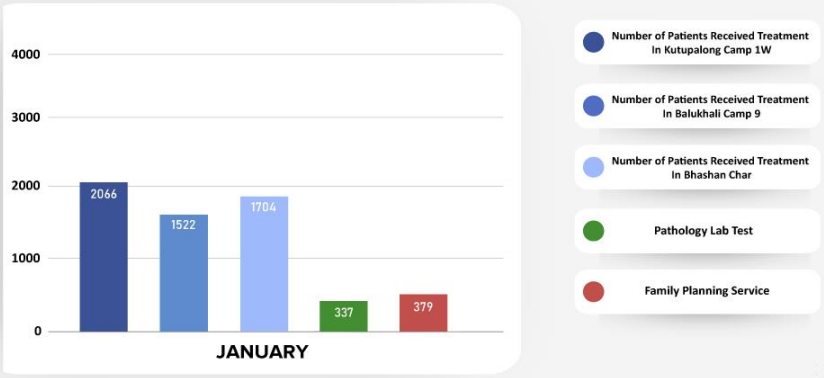
HAEFA BEYOND BORDERS

Revolutionizing Healthcare with Electronic Medical Record: Successful Implementation in Non-communicable Disease Management

The Electronic Medical Recording (EMR) system designed by HAEFA, specifically to track NCD (Non-communicable disease) patients and transform healthcare data management system, has been successfully implemented in all 66 healthcare facilities in Ukhiya and Maheshkhali for the last 1 year. These facilities comprise all Community Clinics, Family Welfare Centres, Union Health Subcenters, and the corresponding Upazila Health Complexs. Healthcare professionals in these facilities can now easily record and monitor patient information with real-time access. The primary goal of establishing this EMR system is to screen routine patients for non-communicable diseases (NCDs). Early identification and intervention are now possible by EMR data analysis, which is the cornerstone of preventive healthcare.

For example, routine checking of blood pressure at community clinic visits makes it possible to identify those who have hypertension, a significant risk factor for cardiovascular diseases. Likewise, blood glucose tests aid in the diagnosis of prediabetes or diabetes in those who do not exhibit symptoms, enabling prompt lifestyle and medical intervention to avoid grave consequences such as heart attack, stroke, and kidney failure. Electronic records simplify administrative work, allowing for effective scheduling, invoicing, and medication administration. Healthcare practitioners can now make better judgments and enhance patient outcomes as they have easier access to patient histories, treatments, and test data. Furthermore, by lowering the possibility of error and loss of health record with manual record-keeping, the computerized medical recording system has improved patient safety and meticulous tracking of patient's health related data. Electronic medical record systems are therefore considered a crucial tool in NCD management as these diseases need to control over a prolong period of time, which will ultimately enhance the longitudinal management and outcomes of NCD throughout the healthcare system.

Health care delivery to FDMN population from HAEFA health camps

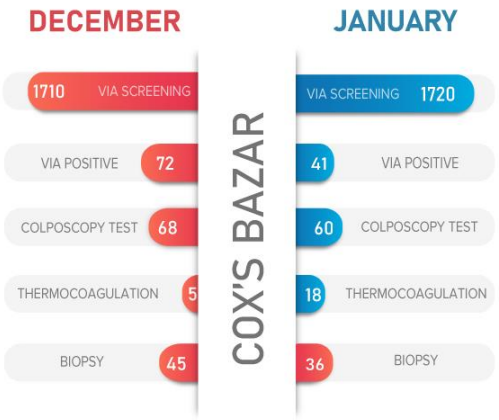


Performing Ultrasonography By HAEFA's Health Professionals

HAEFA'S New Endeavor: Pioneering Ultrasound Services in diagnosing various diseases

At Balukhali Camp 9, Health and Education for All (HAEFA) initiated Ultrasonography services on November 18, 2023. This facility offers diagnostic imaging for the whole abdomen, including Hepatobiliary System (HBS), Kidneys, Ureters, and Bladder (KUB) region along with the much valuable pregnancy profile and foetal status. Since its inception, HAEFA has effectively evaluated 63 patients in January 2024 which ensured precise diagnosis and optimum management of those patients.

Cervical Cancer Screening Update In Cox's Bazar :



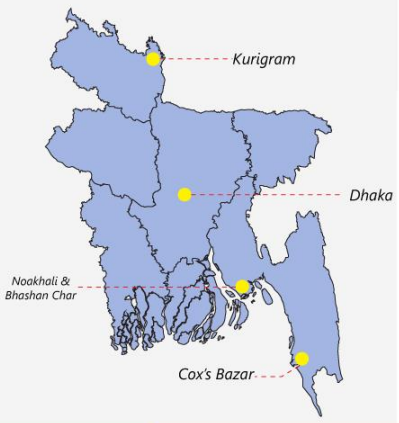
Tuberculosis Screening update under HGSP Project in Cox's Bazar

In January 2024, Health and Education for All (HAEFA) screened **4890** individuals across six Upazilas of Cox's Bazar for Tuberculosis as part of the HGSP (Health and Gender Support) project. This concerted effort underscores Bangladesh's commitment to eradicating TB globally while bolstering community health. HAEFA's awareness building program aims to educate the Rohingya community about TB screening, ensuring sustained efforts even during Ramadan and assuring fasting individuals of no hindrance in undergoing TB tests.

HAEFA's Ongoing Projects

* Click on each to learn more

- Healthcare Services and Tuberculosis Screening in Kutupalong, Balukhali, Ukhiya and health post at Bhashan Char
- Mobile Medical Health Clinics for Host Communities in Ukhiya
- Tuberculosis Screening and Cervical Cancer Screening with Treatment at Cox's Bazar
- NIROG: Empowering NCD Care through Digitalization in Noakhali and Cox's Bazar



ARTICLES

* Click to read full article

Improving EMR Accessibility in Remote & Resource-Limited Regions: Insights from the NIROG System for Rohingya Refugees

By *Ishan Abdullah,*

Access to healthcare is a fundamental human right, yet it remains a constant struggle for those in remote and resource-limited regions. The WHO estimates that at least half of the world's population cannot obtain necessary health services, and those with the least access are often afflicted with a disproportionately high share of the global disease burden. As this inequity persists, there is a dire need for healthcare innovation targeted toward communities in disadvantaged regions.

A significant barrier to quality healthcare in these regions is the lack of a standardized electronic medical record (EMR). Without a comprehensive EMR system, patients go unidentified, and providers lack a precise, chronological medical record, affecting both acute and chronic care. Studies have found that integrating an EMR system would significantly improve patient outcomes while reducing the burden on healthcare providers. Comparatively, paper records and other non-digital stores of patient information are more likely to be lost or wrongfully accessed. In resource burdened regions, inefficient and ineffective care may also lead to propagated patient aversion to seeking necessary check-ups and screenings, exacerbating community health issues. Despite the well-known benefits of EMR systems, disadvantaged communities have been unable to integrate them due to infrastructural obstacles.

Poor electrical supply and limited internet access are major barriers to integrating digital EMR systems in developing countries. In a study of resource-limited African regions, Awokola et al. reported that for many months, they could not use the EHR consistently because of constant power outages. Further studies found that only one of the seven local healthcare facilities in a resource-limited area of Nigeria had internet access. Without centralized databases, partly due to technology infrastructure, there is a higher chance for adverse drug-drug interactions (DDIs), duplicated tests, prolonged waiting times, diminished clinical research capabilities, security breaches, and overall poorer health outcomes in regions with the most dire need of help.

The Rohingya refugees, who were forcibly displaced from their homes in Myanmar in 2017, are a persecuted minority who may greatly benefit from an integrative EMR system. As a result of not having a legal identification, Rohingya refugees have lacked formal documentation of health data since 1982. After their mass exodus to the neighboring coast of Bangladesh, almost a million Rohingya people remain in hyperdense refugee camps, with an uncertainty of how long they will have to stay. Lack of healthy living arrangements, limited safe drinking water, malnutrition, poor sanitation and air quality, as well as resourced healthcare services have contributed to the high disease prevalence within these camps. Non-communicable diseases (NCDs) have been particularly prevalent among the Rohingya, as earlier studies estimated that hypertension (51.5%), COPD (20.0%), diabetes (14.2%), and chronic liver disease (13.1%) are the most common. Treatment of these NCDs require long-term follow-up, compliance with medication regimens, management of comorbidities, and precautions surrounding immunocompromisation in a setting where infections are easily transmitted. The culmination

of these obstacles with low health literacy and the Rohingya's absence of longitudinal medical history has challenged the limited number of qualified local healthcare professionals.

Within the Rohingya camps, lack of access to healthcare records has been identified as a major cause of unproductive use of resources, lack of timely intervention, misinterpretation of medical information, and security exploitations. Like many other remote and resource-limited regions, these camps have limited access to power sources and internet connectivity, contributing to the favored usage of non-secure paper documentation. Health and Education For All (HAEFA), a non-profit organization who has been providing healthcare services to the Rohingya population since the initial migration in 2017, have attempted to provide a solution to this problem through creating an EMR software: NIROG.

Currently serving as the only comprehensive EMR system in the Rohingya camps, NIROG offers a HIPAA-compliant digital database operated on solar-powered tablets that can operate offline and store information in the software without the need for constant internet access. In the camps, NIROG tablets are exclusively operated by trained medical professionals who must log in via a layered access system. Additionally, for the Rohingya people who have not previously been logged in to the database, NIROG tablets are able to take profile pictures, record fingerprints, and assist in making barcoded medical identification cards. When the patient returns, they can scan their medical identification card (which displays their picture, ID number, and barcode) or provide their fingerprint for the system to access their profile. After patient interactions occur, healthcare professionals securely store data offline on their tablets. When the tablets are brought to a nearby town at the end of day, the data is uploaded to HAEFA's medical database and the Directorate General of Health Services, a division of Bangladesh's Ministry of Health and Family Welfare, where authorized health professionals can access the data from anywhere in Bangladesh.

As previously mentioned, a primary challenge in regions lacking EMR systems is a high chance for error with DDIs. Like many modern EMR systems, NIROG (which uses ICD-10 classification) offers a built-in DDI alert. Moreover, the system allows for bidirectional communication between patient and provider, meaning patients can provide updates and gain information about their treatment protocol. Providing more agency and information sources for disadvantaged patients may prompt better overall health literacy and medication adherence.

Preliminary reports of the NIROG system have shown improvements to the quality and efficiency of follow-up for NCD care as clinicians can accurately track prognoses over time. From the system's inception in 2017, it has been reported that NIROG has aided in providing efficient healthcare to over 210,000 Rohingya refugees. Without NIROG, healthcare providers recalled seeing 200 patients a day, and handwritten notes would sometimes take weeks to be officially recorded. After implementing NIROG, providers now claim that they are able to see 500 patients per day as documentation time has drastically reduced. Additionally, during the peak of the COVID-19 pandemic, when projections suggested that 98% of camp residents could become infected if not contained, NIROG played a role in mitigating the outbreak through managing and tracking the spread of the disease. Although further clinical trials of this technology's impact are needed, implementing a secure centralized health database and new means of identifying the Rohingya patients will likely benefit their long-term health.

Considering the insights gained from the Rohingya camps, similarly marginalized communities would likely benefit from an accessible and secure health identity. As NCDs continue to disproportionately affect remote and resource-limited communities, the introduction of EMR could serve as an important step towards promoting global health equity. With further research and innovation of technologies like NIROG, the expansion of integrative EMRs could be a valuable global public health tool for communities that have previously lacked this resource.

Member Spotlight: Alex Jin

By *Somaeya Sultana Meem*,

Alex Jin, a dedicated and ambitious individual, has made it her mission to contribute positively to the world through her work with the HAEFA. Born and raised in Maryland , USA. ***Alex*** attended Poolesville High School before embarking on her higher education journey at Brown University. In 2023, she graduated with a degree in Health and Human Biology with a focus in Global Health.

Throughout her academic career, ***Alex*** was an active member of her community, dedicating her time to various healthcare-related roles. She worked as an Emergency Medical Technician at her local fire department, providing emergency care and transporting patients to hospitals. Her commitment to public health was further exemplified during the COVID-19 pandemic when she served as a Contact Tracer for the Maryland Department of Health, conducting interviews, contacting exposed individuals, and providing isolation guidance.

Alex's academic and professional journey has been marked by a series of experiences that have shaped her dedication to healthcare and her commitment to serving others. This strong foundation in healthcare and public service led ***Alex*** to a university-sponsored internship in the summer of 2021, where she first learned about the HAEFA. The organization's mission to provide free and quality healthcare to underserved communities resonated deeply with ***Alex***, prompting her to apply for a position at HAEFA. Her successful appointment marked the beginning of her journey with the organization, where she quickly became involved in various projects as an intern.

In her role at HAEFA, Alex's responsibilities primarily revolve around website management, annual report writing, and research. Her dedication and impact were evident when she redesigned the organization's website in 2021, ensuring that it featured compelling and accurate content. Her work on the most recent annual report, covering the year 2022-23, demonstrates her contribution to the organization's communication and reporting efforts. Additionally, ***Alex*** is working on a research project titled “Retrospective analysis of symptom monitoring and contact tracing of patients with COVID-19-like symptoms in the Rohingya refugee camps in Cox’s Bazar.” which reflects her commitment to understanding and addressing critical healthcare challenges.

As a recipient of a grant, ***Alex*** has had the opportunity to visit HAEFA work sites and offices as a ‘Monitoring and Evaluation Officer.’ In this role, she is focused on gathering up-to-date information on all HAEFA programs, ensuring that they are accurately reflected on the organization's website and reports. Alex is also tasked with generating high-quality photo and video content for HAEFA, which is used for promotional and fundraising campaigns. Her

ability to balance her commitments at HAEFA with her responsibilities as a university student in the USA speaks to her admirable work ethic and time management skills.

Despite the challenges of working remotely, ***Alex***'s passion for the work of HAEFA has only grown stronger. One of her most memorable experiences was her trip to Bangladesh, where she had the opportunity to meet HAEFA's dedicated and compassionate staff. This experience was particularly meaningful for ***Alex***, as it allowed her to see the impact of the organization's work first-hand and connect with the team on a personal level. Her dedication to HAEFA's mission and her desire to continue contributing to its efforts in the future demonstrate her enduring commitment to making a lasting impact through her work.

In August, ***Alex*** will begin medical school in the USA, with the goal of becoming a compassionate physician who serves vulnerable communities and empowers her patients to live their healthiest lives. Despite her upcoming academic pursuits, Alex plans to continue her work with HAEFA, and after she graduates, she hopes to contribute to the organization in a medical advisory capacity as well. Her vision for the future reflects her unwavering commitment to making a positive impact on the world through her passion for healthcare.

In addition to her professional pursuits, Alex enjoys outdoor activities such as rock climbing and hiking, as well as playing the piano and guitar. Her love for travel and exploring new cuisines reflects her adventurous spirit and diverse interests.

Alex's mentorship and support from ***Dr.Ruhul Abid*** have played a significant role in shaping her journey with HAEFA, and she credits him for his guidance and encouragement. Her gratitude for his support reflects the importance of mentorship and collaboration in her professional journey and underscores the impact of strong relationships in driving meaningful change.

Alex Jin's journey with HAEFA is a testament to her dedication to making a positive impact on the world through her work and her passion for healthcare.

As she continues to pursue her goals, ***Alex***'s dedication to making a difference through her work with HAEFA and her future career in medicine serves as an inspiration to all who aspire to create meaningful change in the world.

Triumph Over Tuberculosis: A Tale of Timely Detection and Prompt Action

By *Sajia Haque*,

As usual, on the morning of October 16, 2023, a dedicated team embarked on a significant mission in G-29 Block of Camp 9 for HAEFA's (Health and Education for All) tuberculosis screening program. Among the individuals examined that day was Mohammad Ali (name changed to maintain patient's privacy), whose story would soon become a testament to the success of health initiatives.

Upon reaching Mohammad Ali's room, the team engaged in a comprehensive conversation, elucidating the symptoms of tuberculosis and inquiring about his health. Mohammad Ali revealed a persistent cough lasting over two weeks, accompanied by night sweats, mild fever, reduced appetite, and weight loss. Recognizing these symptoms as potential indicators of tuberculosis, the team declared him a suspect and provided him with a container to collect in the morning the following day.

With diligence, Mohammad Ali submitted his sputum sample the next morning. The team immediately transported the sample to the DOT (Directly Observed Treatment) center for testing. The preliminary examination yielded a positive result for tuberculosis, confirming the suspicions.

Mohammad Ali underwent an X-ray at the Gene-xpert facility to delve deeper into the extent of the infection. The results echoed the initial findings, solidifying the need for immediate intervention. A decisive plan outlining a six-month treatment regimen for Mohammad Ali through the DOT center was formulated. On that very day, he received his first month's supply of medication, a crucial step toward his recovery.

Over the following six months, Mohammad Ali would continue to receive monthly supply of medication, ensuring consistent and effective treatment. Regular tests in the second, fifth, and sixth months would monitor his progress, providing valuable insights into the effectiveness of the treatment.

Remarkably, the proactive measures didn't stop at Mohammad Ali alone. The remaining family members underwent TB screening, with results revealing their immunity to the infection. As a preventive measure, both family members were prescribed medication to be taken three days a week for three months, safeguarding them against potential infection during the transitional period.

This success story stands as a beacon of hope, showcasing the efficacy of the HAEFA initiative in prioritizing early detection, prompt action, and comprehensive treatment. HAEFA's commitment to provide health for all has not only identified and treated tuberculosis, but also shielded families from the insidious reach of this disease, fostering a healthier and more resilient community.

Meet HAEFA's Editorial Staff!

Dr. Samia Tasneem, *Mentor and Advisor* to the Newsletter Editorial Board. She joined HAEFA in 2020 and serves as the Honorary Chief NCD Consultant. Dr. Tasneem is a Heart Transplant Cardiologist at St. Vincent's Hospital, Sydney, Australia.

Sajia Haque is the *Editor-in-Chief*, as well as the Intern Coordinator for HAEFA. She joined in 2021. She lives in Dhaka, Bangladesh and is an *Intern Doctor* at Holy Family Red Crescent Medical College Hospital.

Ishan Abdullah is an *Associate Editor*. He joined HAEFA in 2019. He lives in Washington, D.C. and is a first-year medical student at the George Washington University.

Somayea Sultana Meem

She is a 4th year medical student at International Medical College and Hospital, Gazipur, Dhaka, Bangladesh

Tanzina Toma

She graduated with a degree in English Language and literature in 2023 from Ananda Mohan College, Mymensingh, Bangladesh.